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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,311	10/22/2003	Ronald A. Juve	100202667-1	6402

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EXAMINER

SOLOMON, LISA

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 04/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,311

Applicant(s)

JUVE ET AL.

Examiner

Lisa M. Solomon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-11, 13, 16, 18, 19, 21-23, 26 and 28-30 is/are rejected.
- 7) ☐ Claim(s) 6, 7, 12, 14, 15, 17, 20, 24, 25 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/07/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornell et al. (6,296,350) in view of Giere et al. (6,612,673) and Mulay et al. (6,398,333).

3. In regards to claim 1, Cornell et al. (350') discloses a printing system, comprising: an inkjet printhead (24) having plural portions each having an ink-ejecting nozzle; plural heater elements (52) each associated with one of said plural portions to pre-warm ink dispensed by the nozzle of said associated portion in response to a pre-warming signal; and a controller (74) configured to generate the pre-warming signal for one or more heater elements based on a selection criteria for generating the pre-warming signal only when the nozzle of said associated portion is required to eject ink during an upcoming print swath [Column 2 lines 34-60, Column 8 lines 52-62, Column 9 lines 27-52].

4. In regards to claim 2, Cornell et al. (350') discloses the printing system of claim 1 and each of said plural portions is configured to dispense a different color of ink [Column 2 lines 42-48; 62-Column 3 line 1].

5. Cornell et al. (350') does not disclose the controller is configured to analyze which of said different colors of ink is required for the upcoming print swath.

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6. Giere et al. (673') teaches a controller configured to analyze the different colors required for an upcoming print swath [Column 4 lines 16-25, Column 8 lines 13-25].

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to configure the controller disclosed in Cornell et al. (350') to analyze the different colors of ink required for the next print swath as taught in Giere et al. (673') for the purposes of providing more accurate printing parameters.

8. In regards to claim 3, Cornell et al. (350') discloses the printing system of claim 1. Cornell et al. (350') Giere et al. (673') do not disclose the selection criteria is based upon the type of media to receive ink dispensed from the printhead.

9. Mulay et al. (333') teaches selection criteria based upon the type of media to receive ink from the printhead [Column 1 line 64-Column 2 line 14].

10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to provide the selection criteria to be based on the type of media as taught in Mulay et al. (333') in the invention disclosed by Cornell et. Al (350') in combination with Giere et al. (673') for the purposes of regulating ink droplet characteristics.

11. In regards to claim 4, Cornell et al. (350') does not disclose wherein: one of said plural portions is configured to dispense ink of a first color having a first dye load; another of said plural portions is configured to dispense ink of the first color having a second dye load less than said first dye load; said controller is configured to interpret information to determine the type of media to receive ink dispensed from the printhead;

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and when a first type of media is determined, said one of said plural portions is selected for printing and not said another of said plural portions.

12. Giere et al. (673') does not explicitly express one of the plural portions dispenses ink of first color with a first dye load and another plural portion dispenses ink of a first color with a second dye load less than the first dye load. However, Giere et al. (673') does suggest the color density of the ink to be dispensed by certain portions of the printhead [Column 8 lines 14-20].

13. Giere et al. (673') discloses a controller determining which nozzles are selected for printing [Column 8 lines 16-25]. Giere et al. (673') does not disclose this determination to be dependent on the type of media.

14. Mulay et al. (333') teaches a controller interpreting information to determine the type of media [Column 1 line 64-Column 2 line 14].

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to provide in the invention disclosed in Cornell et al. (350') plural portions dispensing ink of a first color with a first and second dye load as well as selective nozzle firing determination taught in Giere et al. (673') and media determination taught in Mulay et al. (333') in the controller disclosed in the invention of Cornell et al. (350') for the purposes of providing stable and reliable printing.

16. In regards to claim 5, Mulay et al. (333') discloses the first type of media comprises one of plain paper and transparency media [Column 4 lines 57-61, Column 5 lines 3-5, See also Fig. 2A].

17. Although, Mulay et al. (333') does not explicitly express the media to be transparency media. It is well known for transparency media to have a glossy topcoat.

18. Claims 8-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook (6,634,735) in view of Cornell et al. (6,296,350).

19. In regards to claim 8, Silverbrook (735') discloses a printing system, comprising: a printhead (130) having plural portions (2) each having an ink-ejecting nozzle located therein; plural temperature sensors each associated with one of said plural portions to monitor the temperature thereof; plural heating elements, each associated with one of said plural portions to apply heat thereto in response to a pre-warming signal; and a controller (132) configured to generate separate pre-warming signals for each of the plural heating elements in response to the plural temperature sensors to elevate the temperature of at least one of said plural portions to a pre-warming temperature [Column 2 lines 30-40; 48-52, Column 3 lines 11-16, Column 9 lines 37-43].

20. In regards to claim 9, Silverbrook (735') discloses the printing system of claim 8 and a controller configured to generate pre-heating signals. Silverbrook (735') does not disclose the controller is configured to omit generation of a pre-warming signal for another of said plural portions to produce no pre-warming thereof.

21. Cornell et al. (350') teaches a controller that is configured to omit generation of a pre-warming signal for another plural portions [Column 9 lines 27-51].

22. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to configure the controller disclosed in Silverbrook (735') to omit the generation of a pre-warming signal for another of plural portions as

taught in Cornell et al. (350') for the purposes of improving operating conditions of an inkjet printer.

23. In regards to claim 10, Silverbrook (735') discloses the printing system of claim 8, wherein the controller is configured to cease to generate pre-warming signals upon beginning printing [Column 8 lines 51-59].

24. In regards to claim 11, Silverbrook (735') the printing system of claim 8, wherein: the controller is configured to continue to generate pre-warming signals after printing has begun; the plural temperature sensors are configured to continue to monitor printing temperature after printing has begun; and when a printing temperature exceeds the pre-warming temperature, the controller is configured to cease to generate pre-warming signals [Column 9 lines 9-23].

25. Claims 13, 16, 18-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Maru et al. (6,224,195) in view of Cornell et al. (6,296,350) and Silverbrook (6, 634, 735).

26. In regards to claim 13, Maru et al. (195') discloses a method of pre-warming a multi-color inkjet printhead having plural portions dispensing ink, including first and second portions, comprising: generating a pre-warming signal for said first portion; pre-warming said first portion in response to the first pre-warming signal [Column 5 lines 36-42]. Maru et al. (195') does not disclose omitting generation of a pre-warming signal for said second portion to produce no pre-warming thereof.

27. Cornell et al. (350') teaches omitting generation of a pre-warming signal for second portion to produce no pre-warming [Column 9 lines 27-51].

28. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to provide the method disclosed in Maru et al. (195') with a step for omitting generation of a pre-warming signal for a second portion as taught in Cornell et al. (350') for the purposes of improving operating conditions for an inkjet printer.

29. In regards to claim 16, Maru et al. (195') discloses the method of claim 13. Maru et al. (195') does not disclose the method further comprising: monitoring the temperature of each of said plural portions; and wherein said generating of said pre-warming signal and said omitting generation of a pre-warming signal are conducted in response to said monitoring.

30. Silverbrook (735') teaches a method further comprising monitoring temperature and generating a pre-warming signal and omitting a pre-warming signal are in response to the monitoring [Column 2 lines 48-52, Column 9 lines 9-23].

31. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to provide a step in the method disclosed in Maru et al. (195') wherein monitoring of temperature determines the generation of a pre-warming signal for the purposes of providing stable operating conditions.

32. In regards to claim 18, Maru et al. (195') discloses the method of claim 13. Maru et al. (195') does not disclose the method of claim 13 further comprising: beginning printing of a print swath; and ceasing generation of the pre-warming signal upon said beginning.

33. Silverbrook (735') teaches a method of printing a print swath and ceasing generation of pre-warming signal when printing has started [Column 8 lines 51-59].

34. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to provide a step in the method disclosed in Maru et al. (195') wherein when printing starts generation of pre-warming signals cease as taught in Silverbrook (735') for the purposes of controlling temperature in an inkjet printhead.

35. In regards to claim 19, Maru et al. (195') discloses the method of claim 13. Maru et al. (195') does not disclose the method further comprising printing a print swath from a beginning point to an ending point; continuing generation of the pre-warming signal after printing from the beginning point; monitoring printing temperature of each of said plural portions during said printing; and ceasing to generate the pre-warming signal when the printing temperature exceeds a threshold temperature before printing to the ending point.

36. Silverbrook (735') teaches a method of printing a print swath from beginning to end; continuing generation of pre-warming signal after printing has begun; monitoring temperature; and ceasing to generate the pre-warming signal when printing temperature exceeds threshold temperature [Column 8 lines 51-59, Column 9 lines 9-23].

37. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to provide a step in the method disclosed by Maru et al. (195') with the printing a print swath from beginning to end; continuing generation of pre-warming signal after printing has begun; monitoring temperature; and ceasing to

generate the pre-warming signal when printing temperature exceeds threshold temperature as taught in Silverbrook (735') for the purposes of providing stable operating conditions and controlling temperature in an inkjet printer.

38. Claims 21-23, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook (6,634,735) in view of Giere et al. (6,612,673) and Mulay et al. (6,398,333').

39. In regards to Claim 21, Silverbrook (350') discloses a printing system, comprising: means for ejecting ink from plural portions of an inkjet printhead (7); means for heating each of said plural portions in response to a pre-warming signal (6); means for generating the pre-warming signal for one of said plural portions (132); and means for omitting generation of the pre-warming signal for another of said plural portions (132) [Column 7 lines 11-14; 23-28, Column 9 lines 37-43].

40. In regards to claim 22, Silverbrook (350') discloses the printing system of claim 21, further comprising: means for monitoring the temperature of each of said plural portions (131); and in response to said means for monitoring, operating said means for generating the pre-warming signal (132) [Column 9 lines 37-43].

41. In regards to claim 23, Silverbrook (350') discloses the printing system of claim 21, further comprising: means for delivering the pre-warming signal to the printing portions (132). Silverbrook (350') does not disclose means for analyzing an upcoming print swath; means for sorting which of said plural portions comprise printing portions and which of said plural portions comprise non-printing portions of said upcoming print swath.

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42. Giere et al. (673') teaches means for analyzing an upcoming print swath; means for sorting which of said plural portions comprise printing portions and which of said plural portions comprise non-printing portions of said upcoming print swath (604) [Column 8 lines 14-25; 51-58].

43. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to provide a means for analyzing a print swath and sorting which plural portions have printing portion and which plural portion have non-printing portions taught in Giere et al. (673') in the printing system disclosed in Siliverbrook (350') for the purposes of improving print quality.

44. In regards to claim 26, Silverbrook (735') discloses the printing system of claim 21, further comprising: means for monitoring the printing temperature of each of said plural portions during printing of a print swath (131); means for determining when a pre-warming temperature generated by said means for heating is exceeded by the printing temperature; and means for ceasing to generate the pre-warming signal when the printing temperature exceeds the pre-warming temperature (132) [Column 9 lines 37-43].

45. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornell et al. (6,296,350) in view of Silverbrook (6,634,735).

46. In regards to claim 28, Cornell et al. (350') discloses an ink dispensing apparatus (22), comprising: a printhead (24) having plural portions including first and second portions; plural ink-ejecting nozzles (56a) at least one of which is located in said first portion, and at least one other of which is located in said second portion; plural heater

elements (52) comprising a first element (52a) associated with said first portion, and a second element (52a) associated with said second portion; wherein the first element is configured to pre-warm ink dispensed by nozzles of said first portion in response to a pre-warming signal; and wherein the second element is configured to fail to pre-warm ink dispensed by nozzles of said second portion when no pre-warming signal is received [Column 2 lines 34-36; 42-47, Column 8 52-57, Column 9 37-52].

47. In regards to claim 29, Cornell et al. (350') discloses the ink dispensing apparatus claim 28. Cornell et al. (350') does not disclose a ink dispensing apparatus further comprising plural temperature sensors each associated with the least one of said plural portions and configured to monitor the temperature thereof.

48. Silverbrook (735') teaches an ink dispensing apparatus with plural temperature sensors each associated with the least one of said plural portions and configured to monitor the temperature thereof [Column 3 11-16, Column 9 lines 9-23; 37-43].

49. It would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to provide an ink dispensing apparatus disclosed in Cornell et al. (350') with temperature sensors to monitor the temperature as taught in Silverbrook (735') for the purposes of providing operable temperature conditions.

50. In regards to claim 30, Silverbrook (735') discloses The ink dispensing apparatus of claim 29, wherein said plural temperature sensors are each configured to generate a temperature signal for use in generating the pre-warming signal [Column 9 lines 37-43].

Allowable Subject Matter

51. Claims 6-7, 12, 14-15, 17, 20, 24-25, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

52. The following is a statement of reasons for the indication of allowable subject matter:

53. In regards to claims 6-7, the prior art does not disclose or suggest the claimed “the selection criteria is based upon a desired print quality of a resulting image formed by ink ejection of selected nozzles” in combination with the remaining claim limitations.

54. In regards to claim 12, the prior art does not disclose or suggest the claimed “after ink ejection from one of said plural portions is not required to complete said upcoming print swath, the controller is configured to cease to generate a pre-warming signal therefore” in combination with the remaining claim limitations

55. In regards to claims 14-15, 17, and 20, the prior art does not disclose or suggest the claimed “wherein said first plural portion to receive the pre-warming signal comprises the dispensing portion; and wherein said second portion to receive no pre-warming signal comprises the non-dispensing portion” in combination with the remaining claim limitations.

56. In regards to claims 24-25 and 27, the prior art does not disclose or suggest the claimed “means for sorting which of said plural portions comprise printing portions and which of said plural portions comprise non-printing portions when printing upon said

upcoming media type; and means for delivering the pre-warming signal to the printing portions" in combination with the remaining claim limitations.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa M. Solomon whose telephone number is (571) 272-1701. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David M. Gray can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LMS
4/13/2006


STEPHEN MEIER
SUPERVISORY PATENT EXAMINER